

REMARKS

Claims 4-13 are pending in the application. Claims 1 and 2 were rejected under 35 U.S.C. § 103 as described in paragraph 2 of the Office Action. Claim 3 was rejected under 35 U.S.C. § 103 as described in paragraph 3 of the Office Action. Claims 4 and 9 are the only independent claims.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attachment is captioned "**Version with Markings to Show Changes Made.**"

It is respectfully submitted that the outstanding rejections of claims 1-3 are moot, as the claims have been cancelled.

It is respectfully submitted that claims 4-13 are patentable over the prior art of record for the following reasons.

The present invention relates to a sensor for use with automatic doors. In particular, the present invention concerns simplifying sensor installation.

As described in the present application starting in paragraph [0003], automatic doors may include an auxiliary safety sensor in the vicinity of the track of the door, between the interior and exterior detection ranges. One example of an auxiliary safety sensor is mounted in such a manner that a transmitter on one side of the doorway is positioned to face a receiver on the other side of the doorway. When a light beam is emitted from the transmitter towards the receiver and interrupted by something, the receiver fails to receive the light beam. The sensor regards this condition as the presence of an object near the door track. Based on this recognition, the auxiliary safety sensor holds the door open even if the activation sensor is turned off.

In order to enhance reliability of object detection, an auxiliary safety sensor may utilize a plurality of sensor sets, each of which comprises a transmitter and a receiver. However, it is described for example in paragraph [0007] of the present application, if the transmitters and receivers are incorrectly installed, the transmitters do not oppose corresponding receivers. Accordingly, the sensors judge that no light is received, and therefore incorrectly determine that the admitted light beams are interrupted by an object. Accordingly, the auxiliary safety sensor prohibits closing of the doors, thereby leaving the doors open.

As described in the last six lines of page 5 of the present application:

"Unfortunately, it is impossible to notice the misconnection before an actual test operation of the automatic door. If misconnection is found by the operation test, a worker has to reconnect the signal lines, which complicates the sensor installation."

As described in paragraph [0009] of the present application, an object of the present invention is to correct misconnection of the transmitter and the receiver automatically, thereby insuring the reliability of the detection performance of the sensor.

Newly added independent claim 4 requires, *inter alia*, a plurality of sensor sets, each comprising a transmission means and a receiving means, a data acquisition means and a data exchange means for exchanging light acceptance data from a first receiving means with light acceptance data from a second receiving means, such that the data acquisition means is operable to acquire predetermined light acceptance data based on light emitted from one of the transmission means and that is received by an opposing receiving means. Similarly, newly added independent claim 9 requires, *inter alia*, a plurality of sensor sets, each sensor set comprising a transmitter and a receiver, a data acquisition means and a data exchanger operable to exchange light acceptance data from a first receiver with light acceptance data from a second receiver such that the data acquisition means is operable to acquire predetermined light acceptance data based on light emitted from one of the transmitters and that is received by an opposing receiver.

It is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness within the meaning of 35 U.S.C. § 103 and, more importantly, that the prior art of record fails to teach the above-identified limitations.

35 U.S.C. § 103 authorizes the Patent and Trademark Office to refuse granting of a patent:

if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

The underlined portion of the statute, coupled with the language in 35 U.S.C. § 102 that "a person shall be entitled to a patent unless" (emphasis added) places a heavy burden on any Examiner seeking to reject the claims of a patent application for obviousness, for it is the task of the patent

Examiner to produce the factual basis for a rejection under 35 U.S.C. § 103. *In re Warner*, 379 F. 2d 1011, 154 USPQ 173 (CCPA 1967).

To safeguard the rights of patent Applicants and prevent perfunctory dismissal of patent claims, Congress and the Patent and Trademark Office have enacted statutes or rules and procedures which must be followed in the examination process.

35 U.S.C. § 132 mandates the Patent and Trademark Office, whenever rejecting any claim for a patent to:

notify the applicant thereof, stating the reasons for such rejection ... together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application.

Section 706.02(j) of the Manual of Patent Examining Procedure instructs:

[a]fter indicating that the rejection is under 35 U.S.C. § 103, the examiner should set forth in the Office Action (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (B) the difference or differences in the claim over the applied reference(s), (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (D) an explanation why one of skill in the art at the time the invention was made would have been motivated to make the proposed modification.

As a matter of Patent and Trademark Office practice, then, due process under 35 U.S.C. § 132 requires an Examiner, whenever rejecting a claim under 35 U.S.C. § 103, to include in his official action, (1) a statement regarding the features of the invention set forth in Applicants' claims; (2) a comparison of the claimed features of the invention with the closest prior art reference or references; (3) an explanation of why the differences between the features of an Applicants' claimed invention and the closest counterparts in the prior art are such that the claimed invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made, and **(4) substantiation of that explanation with either evidence in the form of prior art references or sound scientific reasoning such that one may take official notice of it.** See, for example, *In re Hughes*, 345 F.2d 184, 145 USPQ 467 (CCPA 1965); *In re Soli*, 317 F.2d 941, 137 USPQ 797 (CCPA 1963). Indeed, whenever a claim is rejected under 35 U.S.C. § 103, the Examiner must "expressly make the three factual determinations required by Graham and consider objective evidence of obviousness

before the legal conclusion of obviousness vel non is made." *Hybritech Inc. v. Monoclonal Antibodies, Inc.* 802 F.2d 1367, 231 USPQ 91, 93 (Fed. Cir. 1986)

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the present case, the rejection is under 35 U.S.C. § 103 and the reference describes an invention other than the claimed invention. On the record there are differences between the prior art teachings and what is claimed. The Examiner has noted the difference but has explained that the invention as a whole would have been obvious to one of ordinary skill at the time the invention was made using a motivation that was only disclosed by the Applicants.

As described in the BACKGROUND OF THE INVENTION of the present application, Applicants have recognized a problem associated with a conventional auxiliary safety sensor for an automatic door. Applicants recognize that if the conventional auxiliary safety sensors are incorrectly installed that the error is reparable. In particular, the installer can correctly install the auxiliary safety sensors after a first installation is completed and is proven to be defective. However, such a process complicates sensor installation. The present invention eliminates the need for re-installation of the auxiliary safety sensors thereby decreasing complications associated with sensor installation.

Paragraph 2 of the Office Action indicates that Thomson does not teach a "data exchange means...in the absence of an object within the object detection area." Paragraph 2 of the Office Action further indicates that Thomson teaches "detecting an improperly installed sensor where the sensors or connections are mismatched (see Col. 13, lines 7-9), therefore requiring a technician to correct the coupling of the sensors." Column 13, lines 5-10 of Thomson indicates that a wire terminal mixup will immediately result in a lockout. This is similar to the problem acknowledged in the paragraph [0007] of the present application. However, column 13, lines 53-57 of Thomson describes the only solution in the reference to prevent such a lockout resulting from a wire terminal mixup. In particular, Thomson discusses equipping indicator lights that illuminate upon mating of position sensor cable, thus facilitating proper installment of the sensors.

The only evidence of record of problems associated with improperly installed sensors, other than that provided by the Applicants, is that which is described in Thomson. However, as discussed above, Thomson provides a single solution to the problem, i.e. providing indicator lights that illuminate upon mating of the positions sensors cable. Such a solution as proposed by Thomson is distinct from the solution proposed in the present application. More importantly, contrary to the assertion in the Office Action, there is no evidence in the prior art of record that using an electronic switch box for switching signals from different data-carrying cables can correct an improperly installed cable without requiring the manual task of detaching and re-attaching cable. In particular, the only evidence of record of exchanging light acceptance data to correct improperly installed sensor is that which is provided by the Applicants, which cannot be used against the Applicants in light of *In re Vaeck*.

Nevertheless, in light of the only solution to improperly installed auxiliary sensors provided by the prior art of record, the Examiner divines that it would have been obvious to use "a data exchange means for exchanging light acceptance data in the sensor of Thomson et al., to correct an improperly installed cable without requiring the manual task of detaching and re-attaching cables." In the absence of an explanation, other than that provided solely by the Applicants, supported by specific factual findings based on evidence or sound scientific reasoning, the rejection is merely conclusory in nature and is therefore improper.

In light of the above remarks, it is respectfully submitted that claims 4 and 9 would not have been obvious over Thomson and urge that claims 4-13 are patentable within the meaning of 35 U.S.C. § 103.

It is respectfully submitted that Denton fails to teach the shortcomings of Thomson such that a combination of the teachings of Thomson and Denton would teach that which is required in newly added independent claims 4 and 9.

In particular, similar to Thomson, Denton fails to teach a data exchange means for exchanging light acceptance data from a first receiving means with acceptance data from a second receiving means, such that a data acquisition means is operable to acquire predetermined light acceptance data based on light emitted from a transmission means and that is received by a corresponding receiving

means as required in newly added independent claim 4. Furthermore, Denton fails to teach a data exchanger operable to exchange light acceptance data from a first receiver with acceptance data from a second receiver such that a data acquisition means is operable to acquire predetermined light acceptance data based on light emitted from one of the transmitters and that is received by a corresponding receiver, as required in newly added independent claim 9.

Accordingly, it is respectfully requested that the combination of the teachings of Thomson and Denton fail to teach that which is required in newly added independent claims 4 and 9.

In view of the above remarks, Applicants respectfully submit that claims 4 and 9 would not have been obvious over the cited prior art and urge that claims 4-13 are patentable within the meaning of 35 U.S.C. § 103.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

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